

**WHAT IS CLAIMED:**

1 1. A system comprising:  
2 a radio receiver;  
3 switched mode circuitry operating at a selected  
4 switching frequency; and  
5 circuitry for setting said switching frequency of said  
6 switched mode circuitry as a function of a frequency of a  
7 signal being received by said radio receiver.

1 2. The system of Claim 1 wherein said switched mode  
2 circuitry comprises a switching power supply.

1 3. The system of Claim 1 wherein said switched mode  
2 circuitry comprises a Class D amplifier.

1 4. The system of Claim 1 wherein said circuitry for  
2 setting said switching frequency of said switched mode  
3 circuitry comprises:  
4 a plurality of crystals of differing resonance  
5 frequencies;  
6 a crystal oscillator for generating said switching  
7 frequency from a selected one of said crystals; and  
8 control circuitry for selecting said selected one of  
9 said crystals.

1        5.        The system of Claim 1 wherein said circuitry for  
2        setting said switching frequency of said switched mode  
3        circuitry comprises:

4                a signal generator for generating a base frequency;  
5                a programmable divider for dividing said base frequency  
6        by a selected divisor to generate said switching frequency;  
7                control circuitry for selecting said divisor.

1        6.        The system of Claim 1 wherein said circuitry for  
2        setting said switching frequency includes a microcontroller  
3        operable to select said switching frequency in response to  
4        selection of a reception frequency band by user input.

1        7.        The system of Claim 1 wherein said circuitry for  
2        setting said switching frequency detects said frequency of  
3        said signal received by said radio receiver by measuring a  
4        local oscillator frequency.

1        8.        The system of Claim 1 wherein said switching  
2        frequency is selected such that at least one harmonic of  
3        said switching frequency lies outside a frequency band  
4        including said signal being received by said radio receiver.

1       9.     An amplifier for use in a system including a radio  
2             receiver comprising:  
3             an output transistor for driving an output; and  
4             pulse width modulation circuitry for generating a pulse  
5             width modulated signal in response to an input signal for  
6             switching the conduction state of said output transistor, a  
7             frequency of said pulse width modulated signal selected as a  
8             function of a frequency of a signal received by the radio  
9             receiver.

1       10.       The amplifier of Claim 9 wherein said pulse width  
2             modulation circuitry comprises:  
3             a crystal oscillator for generating an oscillator  
4             signal of a selected base frequency from a selected one of a  
5             plurality of crystals;  
6             a microcontroller for selecting said selected one of  
7             said crystals as a function of said frequency of said signal  
8             received by said radio receiver; and  
9             circuitry for converting said oscillator signal into  
10            said pulse width modulated signal.

1       11.       The amplifier of Claim 10 wherein said circuitry for  
2             converting comprises a ramp generator for generating a  
3             ramped signal in response to an output of said oscillator  
4             and a comparator for comparing the input signal with an  
5             output of said ramp generator.

1 12. The amplifier of Claim 9 wherein said pulse width  
2 modulation circuitry comprises:

3 a signal generator for generating a base signal of a  
4 selected base frequency;

5 a divider for dividing said base frequency by a  
6 selected divisor to generate a signal at said frequency of  
7 said pulse width modulated signal;

8 a microcontroller for selecting said divisor as a  
9 function of said frequency of said signal received by said  
10 radio receiver; and

11 circuitry for converting said signal at said frequency  
12 of said pulse width modulated signal into said pulse width  
13 modulated signal.

1 13. The amplifier of Claim 12 wherein said signal  
2 generator comprises a crystal oscillator.

1 14. The amplifier of Claim 9 wherein said output  
2 transistor comprises a metal oxide semiconductor field  
3 effect transistor.

1 15. The amplifier of Claim 9 wherein said frequency of  
2 said pulse width modulated signal is selected such that at  
3 least one harmonic of said pulse width modulated signal is  
4 outside a selected frequency band including said signal  
5 received by said radio receiver.

1 16. A switched mode power supply for use in a system  
2 including a radio receiver comprising:  
3 a transistor for driving an output; and  
4 circuitry for generating a pulse width modulated signal  
5 for switching said transistor on and off at a switching  
6 frequency selected as a function of a reception frequency of  
7 said radio receiver.

1 17. The power supply of Claim 16 wherein said switching  
2 frequency is selected such that at least one harmonic of  
3 said switching frequency is outside a selected frequency  
4 band including said signal received by said radio receiver.

1 18. The power supply of Claim 16 wherein said circuitry for  
2 generating comprises:  
3 a crystal oscillator for generating said switching  
4 frequency using a selected one of a plurality of crystals of  
5 differing resonance frequencies; and  
6 circuitry for selecting the one of the plurality of  
7 crystals for generating said switching frequency as a  
8 function of a frequency of said reception frequency.

1 19. The power supply of Claim 18 wherein said circuitry for  
2 selecting comprises a microcontroller.

- 1     20. The power supply of Claim 16 wherein said circuitry for  
2         generating comprises:  
3         a base frequency generator; and  
4         a programmable divider for dividing said base frequency  
5     by a selected divisor to generate said switching frequency.

1 21. A method of switching a power transistor used in a  
2 radio receiver comprising the steps of:

3 determining a frequency of a received signal being  
4 received by the radio receiver; and

5 generating a switching signal for switching the power  
6 transistor in response to said step of determining, a  
7 frequency of the switching signal selected such that at  
8 least one harmonic of the switching signal is outside a  
9 frequency band including the frequency of the received  
10 signal.

1 22. The method of Claim 21 wherein the radio includes a  
2 local oscillator and said step of determining comprises the  
3 step of counting periods of the local oscillator.

1 23. The method of Claim 21 wherein the radio includes a  
2 microcontroller and said step of determining comprises the  
3 step of decoding user input selecting the frequency of the  
4 received signal.

1 24. The method of Claim 21 wherein said step of generating  
2 comprises the substeps of:  
3 selecting a crystal from a plurality of crystals of  
4 differing resonance frequencies; and  
5 generating the frequency of the switching signal from  
6 the selected crystal using a crystal oscillator.

- 1     25. The method of Claim 21 wherein said step of generating  
2       comprises the substeps of:  
3       generating a base frequency; and  
4       dividing the base frequency by a selected factor to  
5     generate the switching frequency.  
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